التاريخ : .... الموضوع : ....

Ca Mitabolism

Ca importance:-

1. bone & teeth and other hard tissues health
2. Contractility of the heart
3. improves vesseles Contractility.
4. improves Coagulation
5. works on all body's enzymes.

Ages needs for Calcium:

1. 1 : 3 years 500 mg/day.
2. 4 : 8 years 800 mg/day.
3. 9 : 18 years 1800 mg/day.
4. pregnancy : 1000 - 1300 mg/day.

- taken 3 times a day.

Sources of Calcium.

1. foods : milk, dairy products vegetables.
2. frutified food.

- body Calcium salts:-

- → 45% bound to protein
- → 45% ionized Calcium
- → 10% Ca^{+} ions.

- normal Ca level
  8.5 - 10.5 mg/L

S, A -> acute / Streplo -> sub Acute

التاريـــخ : .... الموضـوع : ....

hyper calcinia:-

- Calcium Level ≥ 10.5 mg/dL
- Ionized Ca > 5.2 mg/dL

- Causes:-

- ① hyper parathyrodism
- ② Chronin renal disease
- ③ TB
- ④ exess Vitamin D
- ⑤ duritics
- ⑥ family history
- ⑦ drug induced: duritics Thiazide, lithium... ⑤
- ⑧ malegnancy
- ⑨ addison's disease

Signs & Symptoms:- (git)

① nausia, vomitting, abdominal pain, anorexia
② fatigue, malaise, muscles weakness (muscles)
③ polyuria, constipation (out)
④ osteomalacia, bone & joints pain (bones)
⑤ ectopic calcification (calcification)

Treatment:-

- ① ↑↑ fluids intake
- ② Cortison
- ③ duritics: lasix
- ④ Calcitonin
- ⑤ biophosphonate,
- ⑥ parathyrodectomy if needed
- ⑦ dialysis in chronic renal failure or in sever cases.

ALAQSA

hypo Calcimia

- Ca lever ≤ 8.4 mg/dL
- inoized Ca < 4.5 mg

Causes

1. Vitamin D diffecancy.
2. hypoparaThyrodism
3. chronic renal failure.
4. acute pancreatitis
5. hyper phosphatemia.
6. multible blood transfusion.

Signs & Symptoms:-

1. hypo calcified white patches on teeth
2. frequent bone fracture.
3. muscle Cramps → tetany: detected by.
4.
   - A. trousseau sign — when the use of the cuf
   - B. Chovestic sign (facial muscles)
5. diviation of The angle of The eye.
6. weakness in The bones and brittle nails.

Treatment

1. I V or oral Calcium
2. Vitamin D supplementation.
3. Alpha1-hydroxylate.

التاريخ : الموضوع :

- Investigations

HyperCalcimaia

1. S.PTH → ↑ in primary hyperparathyrodism
2. S.PTH → ↓ in malegnancy.
3. Thyroid hormons and Vitamin D leveles
4. ECg : - short QT interval
   - arryThmias

+ 5. S-Calcium : ↑

HypoCalcimia

1. Serum Calcium ↓
2. S. PTH : ↓ ~~except in hyperparaThyrodism~~
3. S. phosphorus : ↑
4. ECg : - prolonged interval.
   - arryThmias